DOCUMENT RESUME

ED 277 446 JC 870 077

AUTHOR Balunas, Lynn
TITLE A Study of the Effects of Student Employment on Grade Point Average and Retention at Broome Community College. Working Paper Series No. 3-86.
INSTITUTION Broome Community Coll., Binghamton, NY. Inst. for Community Coll. Research.
PUB DATE 86
NOTE 26p.
PUB TYPE Reports - Research/Technical (143)

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS *Academic Achievement; *Academic Persistence; Community Colleges; Employment Patterns; *Grade Point Average; Grade Prediction; Predictive Measurement; *Student Characteristics; *Student Employment; *Two Year College Students; *Working Hours

ABSTRACT

In spring 1985, a study was conducted at Broome Community College (BCC) in New York to determine the relationship between the number of hours students worked per week, their grade point average (GPA), and persistence in college and the conditions that may influence this relationship. The American College Testing Program Student Opinion Survey was administered to a sample of 464 students to determine students' age, sex, rank in high school graduating class, marital status, dependent children, major, use of student services, residence, and hours of employment. GPA and persistence information were obtained from college records. Study findings indicated that the number of hours worked had a negligible effect on GPA and persistence. The study report includes a review of the literature on influences on attrition and academic achievement. (LAL)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED277446

The INSTITUTE for COMMUNITY COLLEGE RESEARCH

BROOME COMMUNITY COLLEGE
STATE UNIVERSITY OF NEW YORK
P.O. BOX 1017
BINGHAMTON, N.Y. 13902
(607) 771-5000

JC 870 077

A STUDY OF THE EFFECTS OF STUDENT EMPLOYMENT ON GRADE POINT AVERAGE AND RETENTION AT BROOME COMMUNITY COLLEGE

By

Lynn Balunas

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY
R. ROMANO

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☐ This document has been reproduced as received from the person or organization originating it.

X Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

Working Paper Series
No. 3 - 86

A Study of the Effects of Student Employment on Grade Point Average and Retention at Broome Community College

Lynn Balunas

Broome Community College

Binghamton, New York

Fall 1986

Conceptualization

Problem Statement

The number of students who persist in college is of major importance for community colleges. Studies show that almost 50% do not re-enroll at a time when colleges are facing declining enrollments (Smith, 1982).

Many students at community colleges need to work in order to go to college because of their generally lower economic background, compared to students at four-year institutions. Iwai and Churchill (1982) have argued that the various ways that students finance their education, including work, can have a significant effect on whether they continue in college. Other research shows that working while attending college can have positive effects on a student's GPA (Hammes and Haller, 1983). Astin (cited by Vaughn, 1983) in several studies of community colleges and four-year institutions found that students who were more involved with their college were persisters in college. One type of involvement which aided GPA and retention was part-time work, especially on campus; full-time work did not.

Cohen and Brawer (1982) discuss data showing that minority students and students having a lower socio-economic status (SES) persist less in community college than their white counterparts having a higher SES. Astin (cited by Vaughn, 1983) finds that, based on entering student characteristics, an the expected dropout rate for community colleges, determined by the number of students who enroll but do not finish a two year degree, is 45% of each year's enrollment.

Student personnel services are designed and available to stucents to help them attain their goals, one of which is being successful anc continuing in college. Gates and Creamer (1984) say that "future research (in retention) needs to consider variables more reflective of student/institution interaction. Some ideas include ... participation in student activities, or use of student services," (pg. 48). Working too many hours and not making use of services for assistance may result in academic difficulty and not re-enrolling the next semester.

Community college administrators and staff need information about the effects of student employment on GPA and retention. They also need to know if other variables like age, dependent children, and use of college student personnel services such as counseling and student activities, have an effect on GPA and retention. They need to know more specifically whether too many hours of work per week, and how many is too many, contribute to academic difficulty and/or not returning to college (Gates and Creamer, 1984). Knowing this, the college can provide information and services to current students who may be facing these difficulties. Potential students can be informed of possible problem situations and intervention strategies can be developed. If no need of assistance is indicated, college energy and resources can be focused elsewhere.

This study will attempt to measure the relationship between the number of hours students work per week and their GPA and persistence (defined as returning to college the next semester). Other variables considered are age, sex, rank in high school graduating class, number of semesters at a college, part-time or full-time student status, marital status, dependent children, curriculum, use of student services, and whether living at home or independently. This study will attempt to determine the influence these

variables might have on GPA and persistence at Broome Community College (BCC). BCC is a community college in upstate New York which offers credit and non-credit technical and transfer programs and courses to about 6000 day and evening students.

Theoretical Perspective

Learning, memory, and stress theories relate to the problem of the number of hours students work, their GPA, and their persistence in college in that stress can interfere with memory and learning. Learning is a very complex set of cognitive, motor, and emotional experiences which, when it occurs, creates change in the person. When attending college, a person is expected to learn advanced material in a concentrated amount of time potentially creating a lot of change in the person. Optimum conditions need to be present in order for the person to learn effectively.

Spitzer (cited by Coon, 1977), in a study on retention of information, found that memory was increased with daily, short learning and review, and extensive review before the exam. Longer intervals between the time when material was learned and when one needs to remember it (e.g., for an exam) were related to greater losses of memory. Gagne (cited by Munn, 1972) described eight different ways of learning and the conditions that influence learning showing the complexity of the learning process. Studies have also shown that overlearning is profitable in that one is less apt to forget the material when taking an exam. "Overlearning is your best insurance against 'going blank' on a test because of nervousness or anxiety." (Coon, 1977, pg. 233). Studies also show that sleeping after you study and before the test

increases retention making it important to schedule study time and take ample breaks to best retain and recall information.

Holmes and Masuda (cited by Coon, 1977) have found that almost any change in a person's life, even positive, can cause stress. They argued that stress over time can cause illness. They also developed a Social Readjustment Rating Scale that lists major life events, and the possible stress effects that these events may have on one's life. Many life events affecting students, in addition to going to college, are listed. These include marital separation, marital reconciliation, being fired from a job, starting a job, change in financial status, change in living situation, vacation and Christmas.

The implications of these learning, memory, and stress theories may be that students who work high numbers of hours/week may experience more stress. The stress may cause more memory and learning problems which affect their grades, resulting in lower GPA's and not returning to college the next semester; lower persistence in college.

Literature Review

Colleges and universities have been interested in the problem of attrition for several years especially as the competition for students has increased with declining student enrollment. Thus higher education institutions are looking very hard at how to keep the students who do enroll to offset the dwindling numbers of applicants. A study conducted at Boston College (Lonabocker, 1982) revealed that financial concerns and personal problems are the major reasons students cite for leaving. She also found that students are unsure of their career goals and thus need adequate

advising and counseling to help them formulate their life/career plans and choose the appropriate curriculum and courses to reach those goals. When reasons for leaving are further broken down by subgroups it is found that no differences exist between males and females. There are differences, however, between students who have a mean GPA of above 3.0 and students who have a mean GPA of below 3.0. More students left with the lower GPA; one sophomore saying it was because of being both physically and mentally exhausted from working, commuting and studying. There were differences, too, between students who left after one year or less and students who left after more than one year. The major reason students gave for leaving after less than one year was financial. Low grades were the major reason given for leaving after more than one year.

Aitken's (1982) work at the University of Massachusetts supported this study in part, reporting that family/personal problems had a significant effect on students leaving school while financial problems didn't. He hypothesized his model to be valid for a variety of institutions, but since the importance of variables like on-campus housing and student activities can vary from institution to institution he suggests that it is important for each institution to conduct studies of its own from which to base valid information on retention.

In a survey of studies on attrition in higher education, Tinto (1982) found that finances played an important role in students leaving an institution but said that may not be the primary reason for dropping out of college. He postulated that the primary reason was dissatisfaction with the college, causing the student not to look for financial resources in order to stay.

In a study at a university examining the relationship between retention, GPA, and developmental characteristics of college freshmen Allbritten (1983) found that there were differences between how men and women viewed themselves. Men perceived themselves as having more definite career plans than women while women thought themselves to be more mature. He also found life/career plans most predictive of GPA while educational plans contributed most to the prediction of retention.

Pascarella and Chapman (1983) validated Tinto's (1975) model of college withdrawal, relating that social integration played a larger role in student persistence in four-year residential institutions while academic integration was more important in two-year commuter institutions.

Student employment has also been studied as having an effect on GPA and retention. Dallam and Hoyt (1981) studied the relationships between GPA, tested ability, semester hours completed, and the number of hours of employment at a university. Evidence showed that part-time student employment did not have a negative effect on students' GPA and that academic success varied with ability as measured by ACT scores. Supporting this finding Paul (1982) reported in a study of students in economics classes at a university that outside employment had a significantly positive effect on students' GPA. Bella and Huba (1982) also supported the fact that at a university the type of part-time work had no effect on GPA. Hammes and Haller (1983) in a study conducted at a university also stated that working while going to school can have a positive effect on students' GPA but suggest that the costs of working may have social and psychological consequences for the student. Crook, Healy and O'Shea (1984) support this, suggesting that mature career attitudes of university students contribute to

college and work achievement and that college achievement may be related to work achievement. Results of a study conducted by Iwai and Churchill (1982) at Arizona State University are not as positive about the effects of student employment on college achievement. They reported results supported in studies by Astin (cited in Vaughn, 1983) that the more hours students work the greater the negative effects on GPA, but the more sources of income students have (e.g., parents, savings, summer work, part-time work, grants, loans) the better their chances for continuing in college.

Ostberg (1982) argued in a study conducted at Columbia College that the type of financial aid students received did not affect the GPA of students with a similar SES. He did find that students with lower SES had lower GPA's, but that it was not related to financial aid differences but to other variables in the student's background yet to be studied. Evidence showed in a study Voorhees (1984) conducted at a community college on financial aid recipients that financial aid had a significantly positive effect on continuing in college. He concluded, however, more studies are needed to determine more precisely the effects of work and finances on GPA and retention. Edwards and Waters (1982) reported in a university study that involvement in academic work positively influences GPA. If students are too busy working they can't be as involved in studying or in other academic activities as they need or want to be and this may have a negative effect on their GPA and retention.

Various studies have also been conducted looking at the influence age may have on retention and GPA. Greer (1980) related that the older students who entered full-time studies at a junior college had a higher GPA when controlling for high school averages than their younger, more traditional

classmates, but the attrition rate among the older students was higher. In a study of student persisters in a community college, Smith's (1982) evidence showed that female and male nontraditional persisters appeared to be more satisfied with the institution than traditional students. Willett (1983) conducted a five-year longitudinal study of students at a community college; her findings revealed that only 13 percent of the students graduated, 8 percent were still attending college and 50 percent attended with varying frequency. These groups of students did not differ in terms of sex, marital status, or race/ethnic background. A study by McCool (1984), however, yielded results that showed there were significant differences among subgroups in a community college and that the specific needs of each subgroup should be addressed. Leppel (1984) in a university study supported this difference between older and younger students. When controlling for ability, study time, and source of income, Leppel found that, in addition to older students, married students and wealthier students received higher grades. In a study by Cunningham (1982) of undergraduate students in a social work fieldwork program, however, when controlling for ability, volunteer or work experience, and assertion, older students did not perform as well in their fieldwork as their younger classmates.

Although several studies (Allbritten, 1983, Gates and Creamer, 1984, Lonabocker, 1982, and McCool, 1984) have cited the importance of student services in students' GPA and retention, few studies have been conducted in this area. In an initial study Goldman (1981) found that a small group experience in a small living room arrangement with exercises designed to help students get to know each other on a personal level, was directly related to student retention and learning.

In summary, it seems that studies supporting learning and memory theory provide the foundation for understanding how students best learn. Indicating that daily, short study times and extensive review before an exam are best, these studies also indicate that overlearning and sleep are helpful to remember information for a test (cited by Munn, 1965).

Stress theory provides the basis for understanding the conditions which inhibit a person's ability to learn (Coon, 1977). Some studies (Lonabocker, 1982; Aitken, 1982; Iwai and Churchill, 1982; and Leppel, 1984) suggest, too many demands--college, work, and family--can have a negative effect on a student's GPA and returning to college. Other studies (Dallam and Hoyt, 1981; Paul, 1982; Hammes and Haller, 1983; and Crook, Healy and O'Shea, 1984) found that student employment while in college can have a positive effect on GPA. Results yielded by other studies (Greer, 1980; and Leppel, 1984) showed that age has an effect on GPA and that older students generally have higher GPA's. It seems then that various factors affect GPA and retention (e.g., ability, age, number of hours students work) but those factors can vary from institution to institution. Each institution has to conduct its own studies to best know about retention for its institution (Aitken, 1982). What is not known is what the effect of the use of student services may have on students' GPA, retention, and student employment and under what conditions.

Using the results of the studies cited above as a base, this study will attempt to show the relationships between the number of hours students work, their GPA and persistence in college and what conditions may influence that relationship.

Hypotheses

The following are the hypotheses formulated in this study:

H1: Students who work longer hours will have lower GPA's in Spring and Fall 1985 Semesters.

H2: Students who work longer hours will not be apt to re-enroll for college the next semester, Fall 1985.

Diagrams of the relationships in the hypotheses are illustrated below:

Independent Variable	Dependent Variable
Higher Number of Hours Work/Week	Lower GPA Spring and Fall 1985
Higher Number of Hours Work/Week	Less Retention Fall 1985

Moderating Variables

Age

Sex

High School Rank

New or Continuing Student at BCC

Number Credit Hours Taking

Marital Status

Number of Dependent Children

Curriculum

Use of Student Services

Living at Home or Independently

Operational Definitions

The operational definitions of the variables are as follows:

(Work) The number of hours students work per week, an independent variable, a ratio measure, is operationalized by the report of the number of hours students work per week from the American College Testing Program Student Opinion Survey (2-Year College Form) copyrighted in 1981.

(GPA), a dependent variable, an interval measure, is operationalized by the report of the registrar's office at the end of each semester of a student's average grade for courses taken that semester. It is based on a 0 to 4.0 range, 0 being the lowest and 4.0 the highest GPA.

(Retention), a dependent variable, a nominal measure, is operationalized by whether or not a student re-enrolls in college the following semester.

(Age), a moderating variable, an ordinal measure, is operationalized by the age of each respondent.

(Sex), a moderating variable, a nominal measure, is operationalized by being male or female.

(High school rank), a moderating variable, an ordinal measure, is operationalized by the student's rank in his high school graduating class.

(Number of years at BCC), a moderating variable, a nominal measure, is operationalized by the number of semesters the respondent has been at BCC.

(Number of credit hours taking), a moderating variable, an ordinal measure, is operationalized by the number of credit hours the respondent is currently taking.

(Marital status), a moderating variable, a nominal measure, is operationized by being married or not.

(Dependent children or not), a moderating variable, a nominal measure, is operationalized by having dependent children or not.

(Curriculum), a moderating variable, a nominal measure, is operationalized by the curriculum the respondent is enrolled in at BCC, (e.g., liberal arts, business, electrical engineering technology, etc.).

(Use of student services), a moderating variable, a nominal measure, is operationalized by using personal or vocational counseling services or not.

(Living at home or living independently), a moderating variable, a nominal measure, is operationalized by living with parents or living on their own.

Methods

Sample

Out of the 6271 students who were enrolled at BCC, Spring Semester 1985, using an accidental, nonprobability sampling technique, 464 students answered the ACT Student Opinion Survey in April 1985. The students who answered this questionnaire were in the classes of faculty members who volunteered to have students in their classes answer it. Of this group 191 were men and 270 were female. The race and ethnic backgrounds of the respondents were predominately white (422) with black, Oriental, Chicano, Hispanic, and American Indian (29) accounting for the rest of reported responses. The mean age was 19. The students were in the following curricula: Liberal Arts N = 177, Business N = 108, Technologies N = 76, and Health N = 23. The sample is also comprised of day students as it was given in the daytime classes.

Procedure

Students in various classrooms throughout the campus in April 1985 were asked to answer the Student Opinion Survey during their regular class time by their professors who volunteered to assist in this survey. They were informed that it was voluntary and that the results would be used by BCC and SUNY Central in Albany to help in future planning for community colleges in general and BCC in particular. The results were tabulated by BCC and SUNY Central. Their GPA was taken from the Spring Semester in May 1985 and for those who re-enrolled Fall 1985 the GPA was taken in January 1985.

Design

This study was based on an ex post facto design since the independent variable could not be manipulated or controlled and the surveys used are from existing data. The design plan is a panel study since it is using the data of one group of students taken at three different times.

Maximization of experimental variance is attempted by defining the variables from the most extremes possible; for example the number of hours worked can range from 0 to over 40.

Minimization of error variance is attempted by defining the variables in as concrete a way as possible, as number of hours worked per week, GPA, and re-enrolling in college or not the next semester. The errors of measurement are reduced since these are observable, concrete measures of these variables.

Control of extraneous variance is attempted by the use of the moderating variables: age, sex, high school average, number of years at BCC, number of credit hours taken, marital status, number of dependent children, curriculum, use of student services, and whether living at home or

independently. The use of these variables may help us understand the relationship between the independent and dependent variables by controlling some of the influences that may affect that relationship.

Limitations of the study are that the survey was administered at the end of the semester when students may have had their minds and energies focused on finals rather than on assisting the college. The surveys were only administered to students whose instructors volunteered their class time to do it; this may bias the sample in terms of external validity in that there may be something particular to the students whose instructors didn't volunteer, e.g., a particular curriculum may be under represented in the sample. Also only day students are represented as it was administered in the daytime. The self-reporting of various items such as age, sex, marital status, dependent children, and use of services may be a limitation as there is no way to check reliability of this information.

Results

In testing Hypothesis 1, that students who worked higher number of hours of work/week Spring and Fall Semesters 1985 would have a lower GPA those semesters, regression analysis was employed. Regression analysis results indicate that 85 percent of the Fall 1985 GPA can be explained by the combined effects of the Spring 1985 GPA, number of children a student has, the number of credits taken in the Spring and the Fall Semesters, the number of hours students work per week, and the student's age. The results were as follows:

Dependent variable: FAGPA

Summary table

Variable	Multiple R	R square	Rsq change
SPGPA	0.91999	0.84638	0.84638
CHIL	0.92060	0.84750	0.00112
SPCR	0.92066	0.84761	0.00011
FACR	0.92214	0.85034	0.00273
WORK	0.92214	0.85034	0.00000
AGE	0.92232	0.85068	0.00034

Of these variables, Spring GPA accounts for 84.6 percent of the Fall GPA. As can be seen in Rsq change, the combined effect of the rest of the variables accounts for a negligible amount of the Fall GPA.

When looking at the effects of high number of hours of work/week (21 or more hours) and low number of hours of work/week (0 to occassional), regression analysis could not be computed on low number of hours of work but for high number of hours of work the results were as follows:

Dependent variable: FAGPA

Summary table

Variable	Multiple R	R square	Rsq change
SPGPA	0.88448	0.78230	0.78230
CHIL	0.88449	0.78232	0.00001
SPCR	0.88526	0.78369	0.00137
FACR	0.89762	0.80573	0.02204
WORK	0.90074	0.81133	0.00561
AGE	0.90148	0.81268	0.00134

A slightly lower percentage (81 percent) could be explained by the variables measured, thus indicating that for students who work 21 or more hours/week other unknown factors seem to enter in slightly to account for their Fall GPA.

When looking at the factors that influence only the Spring GPA the following results were found:

/

Dependent variable: SPGPA

Summary table

Variable	Multiple R	R square	Rsq change
CHIL	0.14791	0.02188	0.02188
SPCR	0.28948	0.08380	0.06192
WORK	0.29185	0.08518	0.00138
AGE	0.34056	0.11598	0.03081

The combined effects of the number of children, number of credit hours taken, the number of hours of work/week, and the student's age account for 11.5 percent of the Spring GPA; 11 percent more than these combined effects account for the Fall GPA.

In testing Hypothesis 2, that students who worked a higher number of hours/week in Spring Semester 1985 would be less likely to return to college for Fall Semester 1985, a frequency distribution was employed. A slightly higher percentage (66.9 percent) of students who did not work returned to BCC for the Fall 1985 semester than those who worked 21 or more hours/week (61.4 percent).

To elaborate further on the hypothesis that students who worked higher numbers of hours/week would have lower Spring and Fall GPA's, Pearson product-moment correlation coefficients controlling for each variable were employed. Results showed that there was not a significant relationship between the number of hours worked/week and Spring and Fall GPA's. (Spring GPA $r = -.09$, $p.<.05$ and Fall GPA $r = -.10$, $p. <.05$). When controlling for each variable very minor trends were found. The influence of curriculum on the relationship between work and GPA showed a slight negative correlation differing for each curriculum, for Technology majors $r = -.20$, $p.<.04$, for Liberal Arts majors $r = -.10$, $p.<.09$, for Business majors $r = -.04$, $p.<.33$, and for Health majors $r = -.04$, $p.<.41$. When controlling for the single most important source of financial support for college, results were as

follows: parents $r = -.24$, $p.<.001$, self $r = -.10$, $p.<.13$ and outside sources such as loans and grants $r = .05$, $p.<.28$. Similar results were found when controlling for whether students lived with their parents or on their own; with their parents $r = -.13$, $p.<.007$ and on their own $r = .03$, $p.<.37$. When controlling for use of personal counseling services $r = -.20$, $p.<.05$, and for no use of services $r = -.07$, $p.<.10$. When controlling for sex, for men $r = -.16$, $p.<.01$ and for women $r = -.003$, $p.<.48$. When controlling for marital status, for married students $r = .13$, $p.<.22$ and for unmarried students $r = -.08$, $p.<.05$. Results indicate only very minor trends between number of hours worked and GPA's when controlling each variable.

In summary, among the variables measured, 85 percent of the Fall 1985 GPA could be explained. The Spring GPA was most significant, accounting for 84.6 percent of the Fall GPA. Hypothesis 2 was not supported as there was no significant difference in number of hours students worked and their enrollment in college the next semester. Also, using Pearson product-moment correlation coefficients results showed that there was no significant correlation between the number of hours students worked/week and their Spring and Fall GPA's. When controlling for each variable very minor trends were found.

Discussion

The number of hours students work/week and the subsequent effects on GPA and persistence in college were examined in the preceding section. Evidence did not support the predictions. Results showed that the number of hours worked had a negligible effect on GPA and persistence. These results reflect the conflicting data from various studies discussed earlier. Lonabocker, 1982; Aitken, 1982; Iwai and Churchill; and Leppel, 1984 suggest

that too many demands--college, work, and family--can have a negative effect on a student's GPA and retention. Dallam and Hoyt, 1981; Paul, 1982; Hammes and Haller, 1983; and Crook, Healy and O'Shea, 1984 found that student employment while in college can have a positive effect on GPA. This study did not indicate that a high or low number of hours students work/week has a positive or negative effect on GPA and retention. Regression analysis, however, did show that 85 percent of the Fall GPA could be explained with the Spring GPA being the major explanation; academic ability which wasn't controlled for may be a major indicator of GPA. Eighty-five percent is a very high percentage of explanation for research in social science fields. Why work, age and the number of children explained 11 percent of the Spring GPA and only a negligible amount of the Fall GPA is not understood, unless it is somehow related to attrition.

Minor findings, from these results reflect some of the variables that might be thought to influence the relationship between the number of hours worked and GPA. One variable is the demands of the curriculum a person is in. The results for technology majors showed a low negative correlation between the number of hours worked/week and GPA. These results may be indicative of the requirements of technology programs offering less flexibility for part-time study and scheduling of course, lab, and study time than other curricula. Another variable is the source of financial support. Students who live with their parents and cite their parents as the major source of their support showed a higher negative correlation to number of hours worked and GPA, perhaps suggesting less commitment to college than those who were self-supporting and live on their own. Another variable involving use of personal counseling services showed a low negative

correlation between the number of hours student's work and GPA. This suggests that perhaps these people came for assistance when experiencing difficulty trying to work and attend college. The low positive correlation between number of hours worked and GPA for married students may reflect what Leppel (1984) found, that married students generally received higher grades.

Looking at the implications: Two reasons why the predictions were not substantiated are plausible: 1) It was not possible to control for academic ability in this sample of students, and 2) no relationship exists among the variables. Since SAT scores are not required for admission to BCC and since the high school rank in class was available only for 20 students in the sample, there was no way to determine their academic ability and how that might influence the relationship among the number of hours of work/week, GPA and persistence. It is plausible that there is no relationship among the number of hours worked/week, GPA, persistence in college, and the control variables in this study.

The concern that college faculty and administration have about student employment may be a result of intensive interaction with a few students who have problems with working high numbers of hours/week and may not be a campus wide problem or a significant contributor to GPA and persistence.

Three recommendations for future research entail: 1) exploring what contributes to a student's GPA, 2) control for academic ability, and 3) further research into trends suggested by effects of control variables. First, since a student's GPA is a major predictor of the next semester's GPA and persistence, factors contributing to a student's GPA need to be studied. Second, a major predictor of GPA may well be academic ability and needs to be considered in a future study. At BCC placement scores of entering students may potentially be used as an indicator of academic ability.

Students are placed in varying levels of college reading, writing, and math courses based on performance on these tests. Third, further research trends suggested by the control variables are: effects of use of personal counseling services, curriculum, source of financial support, marital status, and other factors on GPA and persistence in college.

Conclusion

The results of this study are important for other community colleges as well as BCC since college faculty and administration are concerned about the effects of work on GPA and persistence. Though more research needs to be conducted, the findings of this study suggest that the number of hours students work combined with the number of credit hours taken, their age and the number of children they have do not have a significant effect on GPA and retention. Other factors not specifically delineated seem to influence GPA. With the results of this study and future studies on factors contributing to GPA and persistence, college faculty and administration can more precisely determine and hopefully positively influence the GPA and persistence of future students.

References

Aitken, Norman D. College Student Performance, Satisfaction and Retention: Specification and Estimation of a Structural Model. Journal of Higher Education, 1982, 53(1), 32-50.

Allbritten, Bill. An Examination of the Relationship Between Retention, Grade Point Average, and Developmental Characteristics of College Freshmen. Murray, Kentucky: Murray State College, 1983. (Eric Document Reproduction Service No. ED 241 876)

Bella, Surjit D. & Huba, Mary E. Student Part-time Jobs: The Relationship Between Type of Job and Academic Performance. The Journal of Student Financial Aid, 1982, 12(3), 22-27.

Cohen, Arthur M. & Brawer, Florence B. The American Community College. San Francisco: Jossey-Bass Publishers, 1982.

Coon, Dennis. Introduction to Psychology, Exploration and Application. New York: West Publishing Co., 1977.

Crook, Robert H., Healy, Charles C. & O'Shea, David W. The Linkage of Work Achievement to Self-esteem, Career Maturity, and College Achievement. Journal of Vocational Behavior, 1984, 25(1), 70-79.

Cunningham, Mary. Admissions Variables and the Prediction of Success in an Undergraduate Fieldwork Program. Journal of Education for Social Work, 1982 18(2), 27-34.

Dallam, Jerald W. & Hoyt, Donald P. Do Students Have Enough Time to Study? College and University, 1981, 57(1), 84-91.

Edwards, Jack E. & Waters, L. K. Involvement, Ability, Performance, and Satisfaction as Predictors of College Attrition. Educational and Psychological Measurement, 1982, 42(4), 1149-1152.

Gates, Anne G. & Creamer, Don G. Two-year College Attrition: Do Student or Institutional Characteristics Contribute Most? Community/Junior College Quarterly, 1984, 8(1-4), 39-51.

Goldman, Ruth. The Classroom as Living Room: Using Group Support Systems to Promote Student Retention and Cognitive Growth in Adult Developmental Students. Detroit, Michigan: Wayne County Community College, 1981. (ERIC Document Reproduction Service No. ED 203 792)

Greer, Linda R. Persistence and Academic Success Among Non-traditional Age Students at a Junior College. Morrow, Georgia: Clayton Junior College, 1980. (ERIC Document Reproduction Service No. ED 189 942)

Hammes, Judith F. & Haller, Emil J. Making Ends Meet: Some of the Consequences of Part-time Work for College Students. Journal of College Student Personnel, 1983, 24(6), 529-535.

Iwai, Stanley I. & Churchill, William D. College Attrition and the Financial Support Systems of Students. Research in Higher Education, 1982, 17(2), 105-113.

Leppel, Karen. The Academic Performance of Returning and Continuing College Students: An Economic Analysis. Journal of Economic Education, 1984, 15(1), 46-54.

Lonabocker, Bouise. Can an Institution Construct a Dropout Profile? College and University, 1982, 58(1), 776-84.

McCool, Audrey C. Facters Influencing Hispanic Student Retention Within the Community College. Community/Junior College Quarterly, 1984, 8(1-4), 19-37.

Munn, Norman L., Fernald Jr., L. Dodge, & Fernald, Peter S. Introduction to Psychology (3rd ed.). New York: Houghton Mifflin Co., 1972.

Ostberg, Kenneth R. An Examination of the Relationship Between Various Methods of Financing College Costs and Academic Achievement. The Journal of Student Financial Aid, 1982, 12(3), 7-15.

Pascarella, Ernest T. & Chapman, David A. Multiinstitutional, Path Analytic Validation of Tinto's Model of College Withdrawal. American Education Research Journal, 1983, 20(1), 87-102.

Paul, Harvey. The Impact of Outside Employment on Student Achievement in Macroeconomic Principles. The Journal of Economic Education, 1982, 13(2), 51-56.

Smith, Alan D. A Study of Student Persisters and Nonpersisters in the Community and Technical College. Community/Junior College Quarterly, 1982, 7(1), 1-13.

Tinto, Vincent. Limits of Theory and Practice in Student Attrition. Journal of Higher Education, 1982, 53(6), 687-700.

Vaughan, George B. & Associates (Ed.). Issues or Community College Leaders in a New Era. San Francisco: Jossey-Bass Publishers, 1983.

Voorhees, Richard A. Financial Aid and New Freshman Persistence: An Exploratory Model. Littleton, Colorado: Arapahoe Community College, 1984. (ERIC ED 246 785)

Willett, Lynn H. "One-stop or Stop-Out" A five-year Longitudinal Analysis of Community College Attendance. Community/Junior College Quarterly, 1983, 7(4), 333-341.

Wilner, Eric. Characteristics Related to Students Withdrawing from College. Community College Review, 1982, 10(2),59-64.

ERIC Clearinghouse for Junior Colleges

FEB 27 1987